

### Remarks

The subject invention pertains to a unique process for the preparation of microfluidics devices wherein one or more elastomeric portions are adhered to a substrate by casting of a liquid curable resin which exhibits volumetric contraction upon cure. The casting can therefore be done at room temperature or only slightly elevated temperature or only slightly elevated temperatures, and at ambient pressure, thus avoiding both high temperatures which may cause outgassing from the elastomer, and high pressures, which may cause the very tiny microfluidic passages in the elastomer to be deformed or even closed off.

In the past prosecution, the claims have been rejected over the combination of *Bauer*, which is not directed to microfluidic devices at all, in combination with Applicants' own disclosure, which, as indicated previously, is not "admitted art", as the Examiner contends. In maintaining the rejection, the Examiner contends that injection moldable thermoplastics which shrink upon curing meet the limitation that the encapsulating resin be a curable resin which exhibits volumetric contraction.

This allegation of the Examiner is without support. Those skilled in the art never regard a moldable thermoplastic as a "curable resin." In curable resins, for example those which cure by addition, by condensation, etc., whether thermocuring, photocuring, or moisture curing, the curing reaction in each case requires chemical reaction, not merely a change in phase.


Accompanying this response is the Declaration of Dr. James W. Proscia, a Ph.D. Chemist (Harvard), who has considerable experience in organic chemistry and polymer chemistry, and has been and adjunct Professor of Chemistry at Wayne State University. Dr. Proscia indicates that one skilled in the art does not consider a curable resin to include thermoplastics.

There is no motivation to combine *Bauer*, which is directed to spray devices, and uses high pressure injection molding, with Applicants' microfluidics devices where very small passageways (measured in  $\mu\text{m}$ ) are contained in soft elastomers, which would be compressed during molding.

Allowance of the claims is respectfully requested.

Respectfully submitted,

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